ISSN (print) 0093-4666 © 2010. Mycotaxon, Ltd. ISSN (online) 2154-8889

MYCOTAXON

DOI: 10.5248/114.85

Volume 114, pp. 85–90 *October–December 2010*

New and interesting records of lichens from Turkey

Kadir Kinalioglu

kkinalioglu@hotmail.com
Giresun University, Faculty of Science and Arts, Department of Biology
28049, Giresun, Turkey

Abstract—Eight species of lichenized and lichenicolous fungi are reported from the Turkish provinces of Giresun, Samsun, and Trabzon. Four taxa, *Dactylospora glaucomarioides*, *Lecania polycycla*, *Lecanora thysanophora,* and *Strigula stigmatella*, are new records for Turkey. A short description based on Turkish material is presented for each taxon.

Key Words —biota, biodiversity, Konakönü

Introduction

Studies aiming to determine the lichens of the biota of Turkey have intensified in recent years (e.g. Candan & Özdemir Türk 2008, Halıcı et al. 2007, Kınalıoğlu 2009b, Öztürk & Güvenç 2010, Yazıcı et al. 2010). However large parts of the lichen biota of Turkey are still largely unknown. Until now the number of taxa recorded from different regions of Trabzon province was 518 (John 1995 [and references therein], 1999, 2000, 2002; John & Breuss 2004, John & Nimis 1998, John et al. 2000, Kınalıoğlu 2007b, 2008, Kınalıoğlu & Engin 2004, Yazıcı 1996, 1999, 2006; Yazıcı & Aslan 2002, 2005), and 431 from Giresun province (Aslan et al. 2002, Aslan & Yazıcı 2006, Duman & Yurdakulol 2007, Halıcı & Şenkardeşler 2009, John & Breuss 2004, Kınalıoğlu 2005, 2006, 2008, 2009a, Kınalıoğlu & Engin 2004, Küçük 1990, Özgen et al. 2003, Steiner 1909, Süleyman et al. 2002, Yazıcı 2006, Yazıcı & Aptroot 2008). The lichen biota of Samsun province, with 129 species reported (John et al. 2000, Kınalıoğlu 2007a, Söylemez et al. 1998), is less known than that of Trabzon and Giresun provinces. This contribution reports further species as first records for Turkey or for the provinces of Giresun, Samsun, or Trabzon.

Materials and methods

The lichen samples were collected from the three provinces Samsun, Giresun and Trabzon between 25 August 2004 and 10 April 2010. All samples were

identified with various lichen guides (e.g. Brodo et al. 2001, Hafellner 1979, Mayrhofer 1988, Purvis et al. 1992, Wirth 1995). The specimens are deposited in the herbarium of the Faculty of Science and Arts, Giresun University, Giresun, Turkey; with some duplicates in personal herbaria of H. Sipman and T. Tønsberg. The accession numbers of the collections are given in parentheses after the locality details.

Taxonomy

Caloplaca arcis (Poelt & Vežda) Arup

A detailed description is provided by Vondrak et al. (2009).

Specimen examined: **Giresun:** Center, Ayvasıl place, sea shore, 40°55'37"N, 38°18'45"E, 10 m, 25 May 2006, on mortar, det. H. Sipman, (Kınalıoğlu 1529).

Thallus yellowish. Apothecia 0.4–0.8 mm diam., rare; thalline exciple yellow; disc orange. Ascospores ellipsoid, 10–14 µm × 5–6.5; septum 4–5 wide. Thallus K+ violet, C–, PD–.

Recently recorded as new to Turkey by Vondrak et al. (2009) from Sinop province. New to Giresun province.

Known also from Europe (Bulgaria, Italy, Netherlands, Slovakia, Spain) mainly growing on inland sun-exposed hard siliceous rocks, but also on pure limestone (Vondrak et al. 2009). In Turkey it was collected from mortar.

Caloplaca limonia Nimis & Poelt

Detailed descriptions are provided by Vondrak et al. (2009) and Nimis & Martellos (2004).

Specimen examined: **Giresun:** Piraziz, Gökçeali village, 40°54'24"N, 38°05'39"E, 422 m, 30 Mar. 2006, on mortar, det. H. Sipman, (Kınalıoğlu 1608).

Thallus bright yellow. Apothecia 0.4–0.7 mm diam., numerous; thalline exciple yellow; disc orange. Ascospores ellipsoid, 12–15 µm × 5.5–8; septum 5–6.5 wide. Thallus K+ violet, C–, PD–.

Recently recorded as new to Turkey by Vondrak et al. (2009) from Çanakkale and Sinop provinces. New to Giresun province.

Known also from Bulgaria, Croatia, Czech Republic, Georgia, Italy, Morocco, Romania, Russia, Ukraine. It mainly grows on coastal calcareous rocks or base-rich, hard siliceous cliffs in dry sun exposed to shaded and damp situations, but also on twigs of maritime shrubs or on mosses and soil. It is also known from inland localities (Vondrak et al. 2009). In Turkey it was collected only from mortar.

Dactylospora glaucomarioides (Tuck.) Hafellner

A detailed description is provided by Hafellner (1979).

Specimen examined: **Giresun:** Dereli, Karagöl mountains, 40°35'51"N, 38°10'30"E, 3050 m, 29 Jul. 2007, on *Ochrolechia* sp. on soil, det. H. Sipman, (Kınalıoğlu 1591).

Apothecia black, scattered on the thallus surface of the host; disc 0.1–0.5 mm diam., mostly flat, with thick margin, (0.2–0.4 mm diam.). Paraphyses septate, 1.3–2 µm thick. Ascospores dark brown, 1–3 septate, 12.5–20 × 5–7.5 µm.

New to Turkey. This lichenicolous species known also from America and Russia growing on *Ochrolechia upsaliensis* (mostly thallus, occasionally apothecia), and on *Megaspora verrucosa* (apothecia, thallus) (Hafellner 1979, Zhurbenko 2004). In Turkey, it was collected on thallus of epigeic *Ochrolechia* sp. on exposed mountain ridges.

Lecania polycycla (Anzi) Lettau

Detailed descriptions are provided by CNALH (2009) and Mayrhofer (1988).

Specimen examined: **Samsun**, Ayvacık, near Suatuğurlu dam, 41°04'40"N, 36°40'13"E, 50 m, 22 Jul. 2006, on mortar, det. H. Sipman, (Kınalıoğlu 1797).

Thallus granular or rimose to areolate, olive-brown. Apothecia abundant, 0.3–0.9 mm in diam; disc flat to slightly convex, brownish; margin whitish-gray. Hymenium 40–50 µm. Ascospores ellipsoid, 0–1 septate, 9–12.5× 3–5 µm. Thallus C–, K–, PD–.

New to Turkey. Widespread in Europe, Africa and North America growing on calcareous rocks and rarely on acidic rocks (CNALH 2009, Mayrhofer 1988). In Turkey it was only collected from mortar in sun exposed area.

Lecanora thysanophora R.C. Harris

Detailed descriptions are provided by Brodo et al. (2001), Harris et al. (2000), and Kowalewska & Kukwa (2003).

Specimens examined: **Giresun**: Keşap district, Geçit village, 40º46'13"N, 38º32'48"E, 720 m, 25 Aug. 2004, on *Corylus* sp., det. Tor Tønsberg, (Kınalıoğlu 1794). **Giresun:** SW of city centre, Boztekke village, 40º55'05"N, 38º18'31"E, 8 m, 10 Apr. 2010, on *Corylus* sp., det. Tor Tønsberg, (Kınalıoğlu 1795).

Thallus thin, green-yellow, leprose, continuous or patchy. Apothecia not observed. Fibrous prothallus conspicuous at the thallus margins. Thallus K+ yellow, KC+ deep yellow, C–, PD–,

New to Turkey. Known also from North America and many European Countries mainly growing on trunks of deciduous trees, especially *Acer saccharum* and *Thuja occidentalis*, but also on *Populus*, *Tilia*, or even on shaded siliceous rocks, in shaded or partly shaded forest (Brodo et al. 2001, Harris et al. 2000, Kowalewska & Kukwa 2003). In Turkey it was collected from *Corylus* sp. in partly shaded and damp hazelnut gardens.

Melanelia substygia (Räsänen) Essl.

Detailed descriptions (as *Melanelia tominii*) are provided by Brodo et al. (2001) and CNALH (2009).

Specimen examined: **Trabzon**: Araklı, Near the Uzuntarla, 40°39'47"N 40°2'49"E, 2390, 22 Aug. 2005, on moss, det. H. Sipman, (Kınalıoğlu 1478).

Thallus dark brown to black; lobes flat to weakly convex, 1–2.5 mm wide, pseudocyphellae laminal, whitish to dark. Apothecia not observed. Medulla C+ red, KC+ red, PD–, K–.

In Turkey *Melanelia substygia* was previously recorded from Erzurum province (Yazıcı & Aslan 2000). New to Trabzon province.

Known also from Europe, North America, North Africa and Asia growing on non-calcareous rocks, usually in open, dry sites and also in forested regions (Brodo et al. 2001, CNALH 2009). In Turkey it was collected from on mosses in exposed areas at high elevation.

Mycobilimbia berengeriana (A. Massal.) Hafellner & V. Wirth

Detailed descriptions (as *Lecidea berengeriana*) are provided by CNALH (2009), Purvis et al. (1992), and Thomson (1997).

Specimen examined: **Giresun**: Dereli, Karagöl mountais, 40°35'51" N, 38°10'30" E, 3050 m, 29 Jul. 2007, on turf, det. H. Sipman, (Kınalıoğlu 1594).

Thallus thick, white-grey, with granular warts 0.1–0.2 mm diam. Apothecia 0.3–1.2 mm diam.; disc flat or weakly convex, brownish- black. Hymenium 55–65 µm tall. Ascospores ellipsoid, 9–17 × 4–5.5 µm. Thallus C–, K–, KC–, PD–.

In Turkey previously recorded from Gümüşhane (Yazıcı & Aslan 2000) New to Giresun province.

Known also from North America, England and Scotland growing on mosses over soil and on ± calcareous rocks or on exposed turf of mountain ridges or summits (CNALH 2009, Purvis et al. 1992, Thomson 1997). In Turkey it was only collected from turf at high elevation.

Strigula stigmatella (Ach.) R.C. Harris

Detailed descriptions are provided by CNALH (2009), Purvis et al. (1992), and Brodo (2001).

Specimen examined: **Giresun:** Dereli, Tepeköknarlı village, 40°47'28"N, 38°26'44"E, 605 m, 14. Apr. 2005, on *Carpinus* sp., conf. H. Sipman, (Kınalıoğlu 1622).

Thallus whitish-grey, very thin. Perithecia black, semi-immersed, 0.2–0.5 mm diam. Ascospores 25–36 × 5–7.5 µm, 6–7 septate, fusiform. Thallus C–, K–, KC–, PD–.

New to Turkey. Known also from the Europe, America and Canada growing on the bark of old broad-leaved trees, or over mosses on tree bases (Purvis et al. 1992). In Turkey it was only collected from on trunk of *Carpinus* sp. in entrance of shaded forest.

Acknowledgements

The identification and confirmation of numerous samples by Dr. H. Sipman and Dr. Tor Tønsberg is gratefully acknowledged. I also thank peer-reviewers Dr. A. Nordin & Dr. P. Giordani for their contributions on revising article.

Literature cited

Aslan A, Yazıcı K. 2006. Contribution to the lichen flora of Giresun Province of Turkey. Acta Botanica Hungarica 48(3–4): 231–245. doi:10.1556/ABot.48.2006.3-4.1

Aslan A, Aptroot A, Yazıcı K. 2002. New lichens for Turkey. Mycotaxon 84: 227–280.

Brodo IM, Sharnoff SD, Sharnoff S. 2001. Lichens of North America. Yale University Press, London.

Candan M, Özdemir Türk A. 2008. Lichens of Malatya, Elaziğ and Adıyaman provinces (Turkey). Mycotaxon 105: 19–22.

CNALH [Consortium of North American Lichen Herbaria]. 2009.
<http://symbiota.org/nalichens/>.

Duman C, Yurdakulol E. 2007. Lichen Records from Sarıçiçek Mountain in Southern Giresun Province, Turkey. Turk J. Bot. 31: 357–365.

Hafellner J. 1979. Karschia. Revision einer Sammelgattung an der Grenze von lichenisierten und nichlichenisierten Ascomyceten. Beiheft zur Nova Hedwigia 62: 1–248.

Halıcı MG, Şenkardeşler A. 2009. Giresun için yeni kayıt: Phaeosporobolus usneae. Türk Liken Toluluğu Bülteni 7: 11–12.

Halıcı MG, Candan M, Özdemir Türk A. 2007. New records of lichenicolous and lichenized fungi from Turkey. Mycotaxon 100: 255–260.

Harris RC, Brodo IM, Tønsberg T. 2000. *Lecanora thysanophora*, a common leprose lichen in Eastern North America. The Bryologist 103(4): 790–793. doi:10.1639/0007-2745(2000)103[0790:LTACLL]2.0.CO;2

John V. 1995. Flechten der Türkei IV. Ergänzungen zum die Türkei betreffende lichenologische Schrifttum. Neunkirchener Druckerei und Verlag, Neunkirchen, Germany.

John V. 1999. Lichenes Anatolici Exsiccati. Fasc. 1–3 (No: 1–75). Arnoldia 16: 1–41.

John V. 2000. Lichenes Anatolici Exsiccati. Fasc. 4–5 (No: 76–125). Arnoldia 19: 1–27.

John V. 2002. Lichenes Anatolici Exsiccati. Fasc. 6–7 (No: 126–175). Arnoldia 21: 1–28.

John V, Breuss O. 2004. Flechten der östlichen Schwarzmeer-Region in der Türkei (BLAM Exkursion 1997). Herzogia 17: 137–156.

John V, Nimis PL. 1998. Lichen flora of Amanos mountain and the province of Hatay. Turkish Journal of Botany 22: 257–267.

John V, Seaward MRD, Beaty JW. 2000. A neglected lichen collection from Turkey: Berkhamsted School Expedition 1971. Turkish Journal of Botany 24: 239–248.

Kınalıoglu K. 2005. Lichens of Giresun District, Giresun Province, Turkey. Turkish Journal of Botany 29: 417–423.

Kınalıglu K. 2006. Lichens of Keşap District (Giresun, Turkey). Acta Botanica Hungarica 48(12): 65–76. doi:10.1556/ABot.48.2006.1-2.9

Kınalıoglu 2007a. The Lichen Flora of Kocadağ Mountains and Its Environs (Samsun, Turkey). Acata Botanica Hungarica49 (1-2): 94-104. doi:10.1556/ABot.49.2007.1-2.10

Kınalıglu K. 2007b. Lichens of the alpine region in Araklı–Sürmene district, Trabzon province (Turkey). Cryptogamie, Mycologie 28(2): 159–168.

Kınalıoglu K. 2008. Three new records for the lichen biota of Turkey. Mycotaxon 103: 123–126.

Kınalıoglu K. 2009a. Additional lichen records from Giresun Province, Turkey, Mycotaxon, 109: 137–140.

Kınalıoglu K. 2009b. Lichens from the Amasya, Corum, and Tokat regions of Turkey. Mycotaxon 109: 181–184.

Kınalıoglu K, Engin A. 2004. Bülbülan (Artvin), Ayder, Anzer (Rize), Kalecik (Trabzon) ve Kümbet (Giresun) Yaylalarının Likenleri. Ot Sistematik Botanik Dergisi 11(2): 167–190.

Kowalewska A, Kukwa M. 2003. Additions to the Polish lichen flora. Graphis Scripta 14: 11–17.

Küçük M. 1990. Giresun Adası'nın Floristik Yapısı. Ormancılık Araştırma Enstitüsü Yayınları 36(2): 58.

Özgen U, Aslan A, Terzi Z. 2003. Phytochemical screening of some lichen species collected from Giresun Province. I. International Congrees on the Chemistry of Natural Products (ICNP) 16–19 October, Trabzon, Türkiye.

Öztürk S, Güvenç S. 2010. Additional lichen records from the western Black Sea region of Turkey. Acta Botanica Hungarica 52(1–2): 159–175. doi:10.1556/ABot.52.2010.1-2.14

Mayrhofer M. 1988. Studien über die saxicolen Arten der Flechtengattung *Lecania* in Europa. II. *Lecania* s. str. Bibliotheca Lichenologica 28: 1–133.

Nimis PL, Martellos S. 2004. Keys to the lichens of Italy. I. Terricolous species. Edizioni Goliardiche, Trieste.

Purvis OW, Coppins BJ, Hawksworth DL, James PW, Moore DM. 1992. The lichen flora of Great Britain and Ireland. Natural History Museum & British Lichen Society, London.

Söylemez M, Gönülol A, Kınalıoğlu K. (1998). Ondokuz Mayıs Üniversitesi Kurupelit Kampüs Alanı (Samsun) Liken Florası Üzerine Bir Araştırma. 14. Ulusal Biyoloji

Steiner J. 1909. Lichenes. In: Handel Mazzetti, D.H.F.V.: Ergebnisse einer botanischen Reisein das Pontische Randgebirge im Sandschak Trapezunt, etc. Annal. Naturhist. Hofmus. Wien 23: 107–123.

Süleyman H, Yıldırım D, Aslan A, Göçer F, Gepdiremen A, Güvenalp Z. 2002. An investigation of the antiinflammatory effects of an extract from Cladonia rangiformis Hoffm. Biol. and Pharm. Bull. 25: 10–13. doi:10.1248/bpb.25.10

Thomson JW. 1997. American Arctic Lichens. 2. The Microlichens. The University of Wisconsin Press, Madison.

Vondrák J, Riha P, Arup U, Sochting U. 2009. the taxonomy of the *Caloplaca* (*Teloschistaceae*) in the Black Sea region; with contributions to the cryptic species concept in lichenology. The Lichenologist 41(6): 571–604. doi:10.1017/S0024282909008317

Wirth V. 1995. Die Flechten Baden–Württembergs. Ulmer, Stuttgart.

Yazıcı K. 1996. Altındere Vadisi Milli Parkı Liken Florası. Turkish Journal of Botany 20: 263–265.

Yazıcı K. 1999. Lichen Flora of Trabzon. Turkish Journal of Botany 23: 97–112.

Yazıcı K. 2006. Four new lichens from Turkey. Myxotaxon 95: 315–318.

Yazıcı K, Aptroot A. 2008. Corticolous lichens of the city of Giresun with descriptions of four species new to Turkey. Mycotaxon 105: 95–104.

Yazıcı K, Aslan A. 2000. Lichens from the regions of Artvin, Erzurum, and Kars (Turkey). Israel J. of Plant Sciences 48: 143–155.

Yazıcı K, Aslan A. 2002. New records for the lichen flora of Turkey. Turkish Journal of Botany 26: 117–118.

Yazıcı K, Aslan A. 2005. Six new lichen records from Turkey. Myxotaxon 93: 359–363.

Yazıcı K, Aptroot A, Aslan A. 2010. Three lichenized fungi new to Turkey and the Middle East. Mycotaxon 111: 127–130.

Zhurbenko MP. 2004. Lichenicolous and some interesting lichenized fungi from the Northern Ural, Komi Republic of Russia. Herzogia 17: 77–86.